WHAT IS CLAIMED IS:

1. Process for the preparation and improvement of pantothenic acid-producing microorganisms by amplification of nucleotide sequences which code for ketopantoate reductase individually or in combination with one another, and optionally additionally of the ilvC gene.

2. The process according to claim 1 wherein amplification occurs through over-expression.

3. The process according to claim 1 wherein the panE gene is amplified.

4. Process according to claim 2, wherein to achieve the over-expression, the number of copies of the genes or nucleotide sequences in the microorganisms is increased by the insertion of plasmid vectors which carry these genes or nucleotide sequences.

5. Process according to claim 2, wherein to achieve over-expression, a promoter and regulation region upstream of a structural gene is mutated.

6. Process according to claim 2, wherein to achieve over-expression, expression cassettes are incorporated upstream of a structural gene.

7. Process according to claim 1, wherein nucleotide sequences which code for ketopantoate reductase are amplified in microorganisms which have one or more metabolite and/or antimetabolite resistance mutations.

8. Process according to claim 1, wherein to achieve amplification, the culture medium and/or the fermentation procedure are changed.

9. Process according to claim 1, wherein metabolic pathways which reduce the formation of pantothenate (pantothenic acid) are eliminated in the microorganisms.

10. Process according to claim 9, wherein the avtA gene is eliminated.

11. Process according to claim 9, wherein the ilvE gene is eliminated.

12. Process according to claim 1, wherein the ilvC gene of *C.glutamicum* is over-expressed or amplified in a microorganism.

13. Process according to claim 12 wherein the microorganism is *Corynebacteria* or *E. coli*.

14. Process according to claim 1, wherein in addition to the nucleotide sequences which code for ketopantoate reductase, one or more of the genes of the metabolic path of pantothenic acid formation are amplified.

15. Process according to claim 14, wherein one or more of the genes which code for the enzymes ketopantoate hydroxymethyltrans-ferase (EC 4.1.2.12), aspartate 1-decarboxylase (EC 4.1.1.11) and pantothenate synthetase (EC 6.3.2.1) are additionally amplified.

16. Process according to claim 14, wherein compatible plasmid vectors which contain the genes are employed.

17. Process according to claim 12, wherein a strain transformed with one or more plasmid vector(s) compatible with one another is employed, and the plasmid vector carries one or more of the genes mentioned, including the panE gene, the genes being arranged in succession and placed under the control of a common promoter or arranged separately from one another under the control of various promoters.

18. Plasmid vector pFE80, characterized by the restriction map reproduced in Figure 6 and deposited as *E.coli* K12 strain MG 1655/pFE80 under the designation DSM 12414.

19. Plasmid vector pFE65, characterized by the restriction map reproduced in Figure 5 and deposited as *E.coli* K12 strain MG 1655/pFE65 under the designation DSM 12382.

20. Plasmid vector pFE32, characterized by the restriction map reproduced in Figure 4 and deposited as *E.coli* K12 strain MG 1655/pFE32 under the designation DSM 12413.

21. *E.coli* K12 strain FE6, which carries a valine resistance.

22. *E. coli* K12 strain FE7, in which the avtA gene is exchanged for an avtA::aadB fragment, deposited under the designation DSM 12380.

23. A microorganism (host cell) of *E.coli* or *Corynebacterium*, which contains one of the plasmid vectors according to claims 18 to 20 and optionally one or more metabolite and/or antimetabolite resistance.

24. *C. glutamicum* ATCC 13032/pFE91, which contains the plasmid vector pFE91 with the ilvC gene of *C. glutamicum*.

25. Process for the preparation of pantothenic acid, comprising the following steps:
    a) fermentation of microorganisms having amplified nucleotide sequences encoding ketopantoate reductase,
    b) concentration of pantothenic acid in the medium or in the cells of the microorganisms,
    c) isolation of the pantothenic acid.

26. Process according to claim 25, wherein ketopantoate is added as a precursor.

27. Process according to claim 26, wherein a precursor of pantothenic acid chosen from the group consisting of β-alanine or ketoisovalerate is added in stage a).

28. Process according to claim 25 wherein microorganisms of *E.coli*, *Corynebacterium* or yeast are employed.